



San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



JUL 08 2013

Gerardo C. Rios, Chief
Permits Office
Air Division
U.S. EPA - Region IX
75 Hawthorne St
San Francisco, CA 94105

Re: **Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)**
District Facility # S-3636
Project # 1131632

Dear Mr. Rios:

Enclosed for your review is the District's engineering evaluation of an application for Authorities to Construct for Pastoria Energy Facility, LLC, located at Tejon Ranch 30 miles south of Bakersfield and 6.5 miles east of Grapevine Rancho El Tejon, which has been issued a Title V permit. Pastoria Energy Facility, LLC is requesting that a Certificate of Conformity, with the procedural requirements of 40 CFR Part 70, be issued with this project. Pastoria Energy Facility, LLC requests ATCs to modify three gas turbine permits by removal of a redundant startup duration limitation.

Enclosed is the engineering evaluation of this application, a copy of the current Title V permit, and proposed Authorities to Construct # S-3636-1-5, '2-5 and '3-5 with Certificate of Conformity. After demonstrating compliance with the Authorities to Construct, the conditions will be incorporated into the facility's Title V permit through an administrative amendment.

Please submit your written comments on this project within the 45-day comment period that begins on the date you receive this letter. If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures
cc: David Torii, Permit Services

Seyed Sadredin
Executive Director/Air Pollution Control Officer

Northern Region
4800 Enterprise Way
Modesto, CA 95356-8718
Tel: (209) 557-6400 FAX: (209) 557-6475

Central Region (Main Office)
1990 E. Gettysburg Avenue
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Southern Region
34946 Flyover Court
Bakersfield, CA 93308-9725
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San Joaquin Valley
AIR POLLUTION CONTROL DISTRICT



JUL 08 2013

Mike Rinehart
Pastoria Energy Facility, LLC
PO Box 866
Lebec, CA 93243

Re: Proposed Authorities to Construct / Certificate of Conformity (Minor Mod)
District Facility # S-3636
Project # 1131632

Dear Mr. Rinehart:

Enclosed for your review is the District's analysis of your application for Authorities to Construct for the facility identified above. You have requested that a Certificate of Conformity with the procedural requirements of 40 CFR Part 70 be issued with this project. Pastoria Energy Facility, LLC requests ATCs to modify three gas turbine permits by removal of a redundant startup duration limitation.

After addressing any EPA comments made during the 45-day comment period, the Authorities to Construct will be issued to the facility with a Certificate of Conformity. Prior to operating with modifications authorized by the Authorities to Construct, the facility must submit an application to modify the Title V permit as an administrative amendment, in accordance with District Rule 2520, Section 11.5.

If you have any questions, please contact Mr. Leonard Scandura, Permit Services Manager, at (661) 392-5500.

Thank you for your cooperation in this matter.

Sincerely,

David Warner
Director of Permit Services

Enclosures
cc: David Torii, Permit Services

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San Joaquin Valley Air Pollution Control District
Authority to Construct Application Review
Gas Turbine Engines

Facility Name: Pastoria Energy Facility, LLC	Date: 6/18/2013
Mailing Address: PO Box 866	Engineer: David Torii
Lebec, CA 93243	Lead Engineer: Rich Karrs
Contact Person: Mike Rinehart	
Telephone: 661-282-4404	
Application #(s): S-3636-1-5, '2-5 and '3-5	
Project #: 1131632	
Deemed Complete: 5/14/13	

I. Proposal

Pastoria Energy Facility, LLC (Pastoria) requests ATCs to modify the operating permits for three gas turbine engine (GTE) units to delete a redundant requirement that specifies CO and NOx emissions limits for units undergoing a startup. The permit condition specifying these emissions limits is shown below:

By two hours after turbine initial firing, GTE exhaust emissions shall not exceed any of the following: NOx (as NO₂) -12.2 ppmv @ 15% O₂ or CO - 25 ppmv @ 15% O₂.
[District Rule 4703] Y

The requirements listed above for NOx and CO emissions during startup, which derive from an earlier version of Rule 4703, are now out of date and conflict with the New Source Review (NSR) requirements for startup that are on the current permits. Therefore, it is appropriate to remove the redundant startup emission requirements for NOx and CO.

The current permit for each unit defines startup (cold start) as the period from initial firing until the unit meets it's steady state full load performance limits (lb/hr and ppmv @ 3% O₂). The startup period must not exceed 3 hours in duration. Maximum hourly emissions of NOx and CO are also limited during the 3 hour startup period. The currently approved requirements for startup have also been shown to satisfy the requirements set forth in Rule 4703 governing startup.

The requested change does not impact any Rule 2201 (NSR) requirement or emission limit, and is not an NSR modification.

Pastoria received their Title V Permit on 1/31/12. This modification can be classified as a Title V minor modification pursuant to Rule 2520, and can be processed with a Certificate of Conformity (COC). Since the facility has specifically requested that this project be processed in that manner, the 45-day EPA comment period will be satisfied prior to the issuance of the Authority to Construct. Pastoria must apply to administratively amend their Title V permit.

II. Applicable Rules

Rule 2201	New and Modified Stationary Source Review Rule (4/21/11)
Rule 2410	Prevention of Significant Deterioration (6/16/11) (not an NSR modification; therefore this rule does not apply for this project)
Rule 2520	Federally Mandated Operating Permits (6/21/01)
Rule 4001	New Source Performance Standards (4/14/99) 40 CFR Part 60 Subpart GG - Standards of Performance for Stationary Gas Turbines 40 CFR Part 60 Subpart KKKK - Standards of Performance for Stationary Combustion Turbines – not applicable – turbine installed prior to February 18, 2005
Rule 4101	Visible Emissions (2/17/05)
Rule 4102	Nuisance (12/17/92)
Rule 4201	Particulate Matter Concentration (12/17/92)
Rule 4703	Stationary Gas Turbines (9/20/07)
Rule 4801	Sulfur Compounds (12/17/92)
CH&SC 41700	Health Risk Assessment
CH&SC 42301.6	School Notice
Public Resources Code 21000-21177: California Environmental Quality Act (CEQA)	
California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15000-15387: CEQA Guidelines	

III. Project Location

The facility is located at Tejon Ranch 30 Miles S of Bakersfield and 6.5 Miles E of Grapevine Rancho El Tejon, CA. The equipment is not located within 1,000 feet of the outer boundary of a K-12 school. Therefore, the public notification requirement of California Health and Safety Code 42301.6 is not applicable to this project.

IV. Process Description

The startup duration of the Pastoria facility combined cycle units (gas turbine engines/heat recovery steam generators (HRSG)/steam turbines) depends on how fast the high pressure steam drum and the steel wall of each steam turbine can be warmed to operating temperature without generating stress cracks or otherwise damaging the units. During a cold startup, in which a unit has been shut down for more than 72 hours, the HRSG and the steam turbine parts are at ambient temperature and there is a great deal of thermal mass that must be heated. Once the high-pressure steam drum is heated, steam developed in the HRSG from the heated turbine exhaust is admitted into the steam turbine at a controlled temperature to

heat it as rapidly as possible without causing stress cracking or differential thermal growth between the steam turbine rotor and casings. The steam temperature is controlled by limiting the load on the gas turbine. At lower load points, the gas turbine is tuned for combustion stability and not for emissions performance, so uncontrolled emissions at low loads are much higher than uncontrolled emissions at typical operating loads (above about 50%). The allowable rate of temperature increase at the steam turbine is the limiting factor in determining how quickly each gas turbine can be ramped up to the higher loads that will achieve the required CO performance limits, 25 ppmv (Rule 4703) and 6 ppmv (BACT). The applicant has indicated that this load point cannot be reached within 2 hours after initiating a cold start without causing damage and/or excessive wear to equipment, but can be reached within 3 hours after initiating a cold start.

V. Equipment Listing

Pre-Project Equipment Description (see PTOs in Appendix A):

- S-3636-1-4: 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS AND SELECTIVE CATALYTIC REDUCTION, WITH HRSG #1 AND 185 MW STEAM TURBINE #1 IN A TWO ON ONE COMBINED CYCLE WITH GAS TURBINE ENGINE S-3636-2
- S-3636-2-4: 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #2, AND A SINGLE 185 MW STEAM TURBINE #1 SHARED WITH GAS TURBINE ENGINE S-3636-1
- S-3636-3-4: 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #1 AND 90 MW STEAM TURBINE #2

Proposed Modification:

- S-3636-1-5: MODIFICATION OF 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS AND SELECTIVE CATALYTIC REDUCTION, WITH HRSG #1 AND 185 MW STEAM TURBINE #1 IN A TWO ON ONE COMBINED CYCLE WITH GAS TURBINE ENGINE S-3636-2: REMOVE 25 PPMV CO @ 15% O₂ WITHIN TWO HOURS LIMIT FROM INITIAL FIRING FROM COLD STARTUP CONDITION

- S-3636-2-5: MODIFICATION OF 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #2, AND A SINGLE 185 MW STEAM TURBINE #1 SHARED WITH GAS TURBINE ENGINE S-3636-1: REMOVE 25 PPMV CO @ 15% O₂ WITHIN TWO HOURS LIMIT FROM INITIAL FIRING FROM COLD STARTUP CONDITION
- S-3636-3-5: MODIFICATION OF 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #1 AND 90 MW STEAM TURBINE #2: REMOVE 25 PPMV CO @ 15% O₂ WITHIN TWO HOURS LIMIT FROM INITIAL FIRING FROM COLD STARTUP CONDITION

Post Project Equipment Description:

- S-3636-1-5: 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS AND SELECTIVE CATALYTIC REDUCTION, WITH HRSG #1 AND 185 MW STEAM TURBINE #1 IN A TWO ON ONE COMBINED CYCLE WITH GAS TURBINE ENGINE S-3636-2
- S-3636-2-5: 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #2, AND A SINGLE 185 MW STEAM TURBINE #1 SHARED WITH GAS TURBINE ENGINE S-3636-1
- S-3636-3-5: 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #1 AND 90 MW STEAM TURBINE #2

VI. Emission Control Technology Evaluation

The GTEs are currently equipped with NO_x control equipment and selective catalytic reduction (SCR) with ammonia injection. No control technology changes are proposed.

VII. General Calculations

A. Assumptions

As shown below in Section VIII, this project is not an NSR modification; therefore, calculations are not required.

VIII. Compliance

Rule 2201 New and Modified Stationary Source Review Rule

This rule shall apply to all new stationary sources and all modifications to existing stationary sources which are subject to the District permit requirements and after construction emit or may emit one or more affected pollutant.

Pursuant to section 3.25.1 a modification is an action including at least one of the following items:

- 3.25.1.1 Any change in hours of operation, production rate, or method of operation of an existing emissions unit, which would necessitate a change in permit conditions.

The units currently have a three hour cold startup limit and cold start emission limits which will not change.

- 3.25.1.2 Any structural change or addition to an existing emissions unit which would necessitate a change in permit conditions. Routine replacement shall not be considered to be a structural change.
- 3.25.1.3 An increase in emissions from an emissions unit caused by a modification of the stationary Source when the emissions unit is not subject to a daily emissions limitation.
- 3.25.1.4 Addition of any new emissions unit which is subject to District permitting requirements.

As discussed below, the project does not constitute an NSR modification and NSR emission calculations and compliance review are not required.

The proposed action does not result in any physical change to equipment or change in the hours of operation, production or utilization rate, method of operation or any NSR required emissions limit. The condition being deleted is redundant to and out of date with current NSR and Rule 4703 emissions requirement relating to startup.

The current permits for the three Pastoria gas turbine engines have conditions that define startup periods and the maximum allowable hourly emission limits for NO_x and CO during those respective periods. The permit for each unit also requires that the steady state, full load NO_x and CO emissions limits (lb/hr and ppmv) be met within three hours of any startup. The current approval does not alter any existing BACT, hourly or daily emissions limit governing startup.

Revised Ambient Air Quality Analysis – CO emissions

The District has revised the ambient air quality analysis for the CO emissions that was included with the original project that was approved in 2004, with the allowance for a 3 hour startup period factored in. This revision is necessary as the assumptions used to assess the impact of the project's CO emissions relative to the 8 hour CO emissions standards are now different. (There was no revision needed to the 1-hour CO ambient air quality analysis originally presented.)

In 2004, the worst case CO emissions increases were modeled assuming that, on any given day, one turbine would be in startup mode at 60% load and the remaining two turbines would be operating in the steady state at 100% load. The results from the 2004 modeling analysis can be used as a basis for assessing the potential impact relative to the 8 hour CO standard of the proposed increase in allowable CO emissions resulting from extending the startup allowance by one hour.

Shown below are the original and revised 8 hour average CO emission rates for the one unit in startup mode, including the assumptions used to arrive at those rates:

Original - CO (8-hour): 337.3 lb/hr (assuming 2 hrs at 1,235 lb/hr; 1 hour at 25 ppmv; and 5 hrs at the maximum hourly CO emissions rate of 24.92 lb/hr)

Revised - CO (8-hour): 478.3 lb/hr (assuming 3 hrs at 1,235 lb/hr and 5 hrs at the maximum hourly CO emissions rate of 24.92 lb/hr)

Originally, with emissions from one turbine in startup mode and the remaining two operating at steady state full load conditions, the maximum CO facility impact was determined to be 301 $\mu\text{g}/\text{m}^3$. Since only one unit will be in startup on any given day, a simple scaling analysis using x/Q will conservatively overestimate the 8-hour average CO impact after the modification.

Scaled up as described above, the maximum CO facility impact is:

$$478.3 \text{ lb}/337.3 \text{ lb} * 301 \mu\text{g}/\text{m}^3 = 427 \mu\text{g}/\text{m}^3.$$

As shown below, the impact of the proposed CO emissions rates are not expected to cause a violation of the state or federal ambient CO standards.

	Max Impact ($\mu\text{g}/\text{m}^3$)	Background ($\mu\text{g}/\text{m}^3$)	Total Impact ($\mu\text{g}/\text{m}^3$)	State Std ($\mu\text{g}/\text{m}^3$)	Federal Std ($\mu\text{g}/\text{m}^3$)
CO (8-hour)	427	2,755	3,182	10,000	10,000

Rule 2520 Federally Mandated Operating Permits

This facility is subject to this Rule, and has received their Title V Operating Permit. The proposed modification is a Minor Modification to the Title V Permit.

In accordance with Rule 2520, these modifications:

1. Do not violate requirements of any applicable federally enforceable local or federal requirement;
2. Do not relax monitoring, reporting, or recordkeeping requirements in the permit and are not significant changes in existing monitoring permit terms or conditions;
3. Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
4. Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
 - a. A federally enforceable emission cap assumed to avoid classification as a modification under any provisions of Title I of the Federal Clean Air Act; and
 - b. An alternative emissions limit approved pursuant to regulations promulgated under section 112(i)(5) of the Federal Clean Air Act; and
5. Are not Title I modifications as defined in District Rule 2520 or modifications as defined in section 111 or 112 of the Federal Clean Air Act; and
6. Do not seek to consolidate overlapping applicable requirements.

As discussed above, the facility has applied for a Certificate of Conformity (COC). Therefore, the facility must apply to modify their Title V permit with an administrative amendment prior to operating with the proposed modifications. Continued compliance with this rule is expected. The facility may construct/operate under the ATCs upon submittal of the Title V administrative amendment/minor modification application.

Rule 4001

NSPS Subpart GG applies to the stationary gas turbines:

There is no change in the NO_x or SO_x emission concentration for the GTEs. Compliance with the NSPS NO_x and SO_x emissions standards were demonstrated in previous approvals.

Reporting and notifications, and initial compliance testing is required as specified in Subpart A.

Compliance is expected.

Rule 4101 Visible Emissions

Visible emissions in excess of 20% opacity or Ringelmann 1 are not expected from properly operated combustion equipment fired exclusively on low-sulfur natural gas. The natural gas-fired GTEs in this project is expected to comply with the opacity limit of this rule.

Rule 4102 Nuisance

Rule 4102 prohibits discharge of air contaminants which could cause injury, detriment, nuisance or annoyance to the public. Public nuisance conditions are not expected as a result of these operations, provided the equipment is well maintained. Therefore, compliance with this rule is expected.

California Health & Safety Code 41700 (Health Risk Assessment)

District Policy APR 1905 – *Risk Management Policy for Permitting New and Modified Sources* specifies that for an increase in emissions associated with a proposed new source or modification, the District perform an analysis to determine the possible impact to the nearest resident or worksite.

As demonstrated above, there are no increases in emissions associated with this project, therefore a health risk assessment is not necessary and no further risk analysis is required.

Rule 4201 Particulate Matter Concentration

This rule limits particulate matter emissions to 0.1 grains per dry standard cubic foot. As natural gas-fired gas turbines emit negligible amounts of particulate matter, compliance with this rule is expected.

Rule 4703 Stationary Gas Turbines

The units are currently in compliance with this rule.

As previously discussed, the Pastoria gas turbine engines are subject to a 3 hour startup period. This startup period will also satisfy the requirements of this rule provided the conditions specified in section 5.3.3.1 through 5.3.3.2 are met. The District has reviewed that applicant's submittal and determined that all of the necessary elements set forth in Sections 5.3.3.1 through 5.3.3.2 have been satisfied. The applicant's submittal is included as Appendix B.

Rule 4801 Sulfur Compounds

Rule 4801 limits sulfur compound emissions to 0.2% (2,000 ppm) dry volume. No change in sulfur emissions is proposed or quantified with this project. The existing GTEs are fired on natural gas containing sulfur compounds well under 2000 ppmvd as SO₂; therefore, continued compliance is expected.

California Health & Safety Code 42301.6 (School Notice)

The District has verified that this site is not located within 1,000 feet of a school. Therefore, pursuant to California Health and Safety Code 42301.6, a school notice is not required.

California Environmental Quality Act (CEQA)

CEQA requires each public agency to adopt objectives, criteria, and specific procedures consistent with CEQA Statutes and the CEQA Guidelines for administering its responsibilities under CEQA, including the orderly evaluation of projects and preparation of environmental documents. The District adopted its *Environmental Review Guidelines* (ERG) in 2001. The basic purposes of CEQA are to:

- Inform governmental decision-makers and the public about the potential, significant environmental effects of proposed activities;
- Identify the ways that environmental damage can be avoided or significantly reduced;
- Prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures when the governmental agency finds the changes to be feasible; and
- Disclose to the public the reasons why a governmental agency approved the project in the manner the agency chose if significant environmental effects are involved.

The District performed an Engineering Evaluation (this document) for the proposed project and determined that all project specific emission unit(s) are exempt from Best Available Control Technology (BACT) requirements. Furthermore, the District has determined that potential emission increases would have a less than significant health impact on sensitive receptors.

Issuance of permits for emissions units not subject to BACT requirements and with health impact less than significant is a matter of ensuring conformity with applicable District rules and regulations and does not require discretionary judgment or deliberation. Thus, the District concludes that this permitting action constitutes a ministerial approval. Section 21080 of the Public Resources Code exempts from the application of CEQA those projects over which a public agency exercises only ministerial approval. Therefore, the District finds that this project is exempt from the provisions of CEQA.

IX. Recommendation

Compliance with all applicable rules and regulations is expected. Pending a 45 day EPA review period, issue ATCs S-3636-1-5, '2-5 and '3-5 with Certificate of Conformity subject to the permit conditions on the attached draft ATCs in **Appendix C**.

X. Billing Information

Annual Permit Fees			
Permit Number	Fee Schedule	Fee Description	Annual Fee
S-3636-1-5	3020-08B H	250,000 kw	\$13,208
S-3636-2-5	3020-08B H	250,000 kw	\$13,208
S-3636-3-5	3020-08B H	250,000 kw	\$13,208

Appendix A

PTOs

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3636-1-4

EXPIRATION DATE: 02/29/2016

EQUIPMENT DESCRIPTION:

168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS AND SELECTIVE CATALYTIC REDUCTION, WITH HRSG #1 AND 185 MW STEAM TURBINE #1 IN A TWO ON ONE COMBINED CYCLE WITH GAS TURBINE ENGINE S-3636-2

PERMIT UNIT REQUIREMENTS

1. Combustion turbine and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Combustion turbine engine(GTE) shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201 and PSD Permit (SJ 99-03) X.K.] Federally Enforceable Through Title V Permit
3. Heat recovery steam generator (HRSG) exhaust duct downstream of the SCR unit shall be equipped with continuously recording emissions monitors (CEM) for NOx, CO, and O2. All CEMs shall be dedicated to this unit and shall meet the requirements of 40 CFR Part 60 Appendices B & F (for CO), and 40 CFR Part 75 (for NOx and O2), and shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns, provided the CEM(s) pass the relative accuracy requirements for startups and shutdown specified herein. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 13, 17 and 18. [District Rule 2201 and PSD Permit (SJ 99-03) X.H.1] Federally Enforceable Through Title V Permit
4. HRSG exhaust duct shall be equipped with a continuously recording emission monitor upstream of the SCR unit for measuring the NOx concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.3] Federally Enforceable Through Title V Permit
7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

S-3636-1-4 Jun 5 2013 3:13PM - TORIO

9. GTE shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
10. Cold startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits in condition 15. Cold startup means a startup when the combustion turbine has not been in operation during the preceding 72 hours. Duration of the cold startups shall not exceed 3 hours. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.5] Federally Enforceable Through Title V Permit
11. Only one of GTEs S-3636-1, '2 or '3 shall be in startup at any one time. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.2] Federally Enforceable Through Title V Permit
12. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit
13. During the cold startup GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) - 130 lb, VOC - 273 lb or CO - 1235 lb, in any one hour. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
14. By two hours after turbine initial firing, GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) - 12.2 ppmv @ 15% O2 or CO - 25 ppmv @ 15% O2. [District Rule 4703] Federally Enforceable Through Title V Permit
15. Emission rates from GTE, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 17.03 lb/hr and 2.5 ppmvd @ 15% O2, VOC - 2.0 ppmvd @ 15% O2, CO - 24.92 lb/hr and 6 ppmvd @ 15% O2 or ammonia - 10 ppmvd @ 15% O2. NOx (as NO2) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4703 and PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
16. Emission rates from the GTE shall not exceed either of the following: PM10 - 9.0 lb/hr and SOx (as SO2) - 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201, 4001, and PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
17. On any day when a startup or shutdown occurs, emission rates from GTE shall not exceed any of the following: PM10 - 216 lb/day, SOx (as SO2) - 84 lb/day, NOx (as NO2) - 450 lb/day, VOC - 355 lb/day or CO - 2,113 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Combined annual emissions from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 - 224,343 lb/year, SOx (as SO2) - 84,780 lb/year, NOx (as NO2) - 344,484 lb/year, VOC - 227,619 lb/year or CO - 1,220,166 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Combined annual emissions of all hazardous air pollutants (HAPS) from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 25 tons/year. Combined annual emissions of any single HAP from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 10 tons/year. [District Rule 4002] Federally Enforceable Through Title V Permit
20. Each one-hour period shall commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve-consecutive-month rolling average emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

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22. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O₂ = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NO_x concentration ppmv at 15% O₂ across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH₃ CEM, the permittee must submit a monitoring plan for District review and approval. [District Rule 4102]
23. Compliance with the short term emission limits (ppmv @ 15% O₂ and lb/hr) shall be demonstrated annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NO_x: ppmvd @ 15% O₂ and lb/hr, CO: ppmvd @ 15% O₂ and lb/hr, VOC: ppmvd @ 15% O₂ and lb/hr, PM₁₀: lb/hr, and ammonia: ppmvd @ 15% O₂. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.1] Federally Enforceable Through Title V Permit
24. Compliance with the startup NO_x, CO, and VOC mass emission limits shall be demonstrated for one of the GTEs (S-3636-1, '2, or '3) at least once every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. CEM relative accuracy shall be determined during startup source testing in accordance with methodology approved by the District. If CEM data is not certifiable to determine compliance with NO_x and CO startup emissions limits, then source testing to measure startup NO_x and CO mass emissions rates shall be conducted at least once every 12 months. [District Rule 1081] Federally Enforceable Through Title V Permit
25. Based on the initial speciated HAPS and total VOC source test conducted for one of the GTEs (S-3636-1, '2 or '3), Pastoria shall correlate the total HAPS emissions rate and the single highest HAP emission rate to the VOC mass emission determined during the speciated HAPS source test. Annual compliance with the HAPS emissions limit (25 tpy all HAPS or 10 tpy any single HAP) shall be by the combined VOC emissions rates for the GTEs (S-3636-1, '2 and '3) determined during annual compliance source testing and the correlation between VOC emissions and HAP(S). [District Rule 4002] Federally Enforceable Through Title V Permit
26. Compliance with natural gas sulfur content limit shall be demonstrated periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 2540 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
27. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
28. Source test plans for seven-year source tests shall include a method for measuring the VOC/CO surrogate relationship that will be used to demonstrate compliance with VOC lb/hr, lb/day, and lb/twelve month rolling emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
29. The following test methods shall be used PM₁₀: EPA method 5 (front half and back half), NO_x: EPA Method 7E or 20, CO: EPA method 10 or 10B, O₂: EPA Method 3, 3A, or 20, VOC: EPA method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, 4703, and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
30. The permittee shall maintain hourly records of NO_x, CO, and ammonia emission concentrations (ppmv @ 15% O₂), and hourly, daily, and twelve month rolling average records of NO_x and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by the CO CEM data and the VOC/CO relationship determined by annual CO and VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of SO_x lb/hr, lb/day, and lb/twelve month rolling average emission. SO_x emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

32. Permittee shall maintain the following records for the GTE: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing; emission measurements; total daily and rolling twelve month average hours of operation; hourly quantity of fuel used and gross three hour average operating load. [District Rules 2201 & 4703] Federally Enforceable Through Title V Permit
33. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period during which a CEMS was inoperative. [District Rules 2201 & 4703, and PSD Permit (SJ 99-03) X.I.1] Federally Enforceable Through Title V Permit
34. Permittee shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001] Federally Enforceable Through Title V Permit
35. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
37. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
38. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and PSD Permit (SJ 99-03) X.I.3] Federally Enforceable Through Title V Permit
40. The combined annual emissions rate from all three CTGs and emergency engines S-3636-7-4 & -12-1, based on 12-month rolling average, must not exceed 344,485 lbs NOx and 1,140,000 lbs CO. [PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
41. The annual SOx emissions from each CTG, based on 12-month rolling average, must not exceed 28,170 lbs. [PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
42. During the hot startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 107 lbs of NOx or 903 lbs of CO in any one hour. Hot startup means a startup when the combustion turbine has been in operation during the preceding 8 hours and duration of hot start-ups shall not exceed 1 hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
43. During the warm startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 119 lbs of NOx or 1021 lbs of CO in any one hour. Warm startup means a startup that is not a hot or cold startup and duration of warm startups shall not exceed 2.5 hours. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
44. During the Shutdown of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 58.5 lbs of NOx or 222.5 lbs of CO in any one hour. Shutdown shall be defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased and duration of shutdowns shall not exceed one half hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

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45. Total number of start-ups and shut-downs for the facility shall not exceed 674 events per year. [PSD Permit (SJ 99-03) X.G.6] Federally Enforceable Through Title V Permit
46. Any excess emission indicated by the CEM system must be considered a violation of the applicable emission limit in the PSD permit. [PSD Permit (SJ 99-03) X.I.4] Federally Enforceable Through Title V Permit
47. The quality assurance project plan used by the Permittee for the certification and operation of the continuous emissions monitors, which meets the requirements of 40 CFR Part 60, Appendix F, must be available upon request to EPA. [PSD Permit (SJ 99-03) X.I.5] Federally Enforceable Through Title V Permit

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Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

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San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3636-2-4

EXPIRATION DATE: 02/29/2016

EQUIPMENT DESCRIPTION:

168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #2, AND A SINGLE 185 MW STEAM TURBINE #1 SHARED WITH GAS TURBINE ENGINE S-3636-1

PERMIT UNIT REQUIREMENTS

1. Combustion turbine and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Combustion turbine engine(GTE) shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201 and PSD Permit (SJ 99-03) X.K.] Federally Enforceable Through Title V Permit
3. Heat recovery steam generator (HRSG) exhaust duct downstream of the SCR unit shall be equipped with continuously recording emissions monitors (CEM) for NOx, CO, and O2. All CEMs shall be dedicated to this unit and shall meet the requirements of 40 CFR Part 60 Appendices B & F (for CO), and 40 CFR Part 75 (for NOx and O2), and shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns, provided the CEM(s) pass the relative accuracy requirements for startups and shutdown specified herein. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 13, 17 and 18. [District Rule 2201 and PSD Permit (SJ 99-03) X.H.1] Federally Enforceable Through Title V Permit
4. HRSG exhaust duct shall be equipped with a continuously recording emission monitor upstream of the SCR unit for measuring the NOx concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.3] Federally Enforceable Through Title V Permit
7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

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9. GTE shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and PSD Permit (SJ 99-03) X.K.] Federally Enforceable Through Title V Permit
10. Cold startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits in condition 15. Cold startup means a startup when the combustion turbine has not been in operation during the preceding 72 hours. Duration of the cold startups shall not exceed 3 hours. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.5] Federally Enforceable Through Title V Permit
11. Only one of GTEs S-3636-1, '2 or '3 shall be in startup at any one time. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.2] Federally Enforceable Through Title V Permit
12. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit
13. During the cold startup GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) - 130 lb, VOC - 273 lb or CO - 1235 lb, in any one hour. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
14. By two hours after turbine initial firing, GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) - 12.2 ppmv @ 15% O2 or CO - 25 ppmv @ 15% O2. [District Rule 4703] Federally Enforceable Through Title V Permit
15. Emission rates from GTE, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 17.03 lb/hr and 2.5 ppmvd @ 15% O2, VOC - 2.0 ppmvd @ 15% O2, CO - 24.92 lb/hr and 6 ppmvd @ 15% O2 or ammonia - 10 ppmvd @ 15% O2. NOx (as NO2) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4703 and PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
16. Emission rates from the GTE shall not exceed either of the following: PM10 - 9.0 lb/hr and SOx (as SO2) - 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201, 4001, and PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
17. On any day when a startup or shutdown occurs, emission rates from GTE shall not exceed any of the following: PM10 - 216 lb/day, SOx (as SO2) - 84 lb/day, NOx (as NO2) - 450 lb/day, VOC - 355 lb/day or CO - 2,113 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Combined annual emissions from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 - 224,343 lb/year, SOx (as SO2) - 84,780 lb/year, NOx (as NO2) - 344,484 lb/year, VOC - 227,619 lb/year or CO - 1,220,166 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Combined annual emissions of all hazardous air pollutants (HAPS) from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 25 tons/year. Combined annual emissions of any single HAP from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 10 tons/year. [District Rule 4002] Federally Enforceable Through Title V Permit
20. Each one-hour period shall commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve-consecutive-month rolling average emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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22. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O₂ = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NO_x concentration ppmv at 15% O₂ across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH₃ CEM, the permittee must submit a monitoring plan for District review and approval. [District Rule 4102]
23. Compliance with the short term emission limits (ppmv @ 15% O₂ and lb/hr) shall be demonstrated annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NO_x: ppmvd @ 15% O₂ and lb/hr, CO: ppmvd @ 15% O₂ and lb/hr, VOC: ppmvd @ 15% O₂ and lb/hr, PM₁₀: lb/hr, and ammonia: ppmvd @ 15% O₂. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.1] Federally Enforceable Through Title V Permit
24. Compliance with the startup NO_x, CO, and VOC mass emission limits shall be demonstrated for one of the GTEs (S-3636-1, '2, or '3) at least once every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. CEM relative accuracy shall be determined during startup source testing in accordance with methodology approved by the District. If CEM data is not certifiable to determine compliance with NO_x and CO startup emissions limits, then source testing to measure startup NO_x and CO mass emissions rates shall be conducted at least once every 12 months. [District Rule 1081] Federally Enforceable Through Title V Permit
25. Based on the initial speciated HAPS and total VOC source test conducted for one of the GTEs (S-3636-1, '2 or '3), Pastoria shall correlate the total HAPS emissions rate and the single highest HAP emission rate to the VOC mass emission determined during the speciated HAPs source test. Annual compliance with the HAPS emissions limit (25 tpy all HAPS or 10 tpy any single HAP) shall be by the combined VOC emissions rates for the GTEs (S-3636-1, '2 and '3) determined during annual compliance source testing and the correlation between VOC emissions and HAP(S). [District Rule 4002] Federally Enforceable Through Title V Permit
26. Compliance with natural gas sulfur content limit shall be demonstrated periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 2540 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
27. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
28. Source test plans for seven-year source tests shall include a method for measuring the VOC/CO surrogate relationship that will be used to demonstrate compliance with VOC lb/hr, lb/day, and lb/twelve month rolling emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
29. The following test methods shall be used PM₁₀: EPA method 5 (front half and back half), NO_x: EPA Method 7E or 20, CO: EPA method 10 or 10B, O₂: EPA Method 3, 3A, or 20, VOC: EPA method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, 4703, and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
30. The permittee shall maintain hourly records of NO_x, CO, and ammonia emission concentrations (ppmv @ 15% O₂), and hourly, daily, and twelve month rolling average records of NO_x and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by the CO CEM data and the VOC/CO relationship determined by annual CO and VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of SO_x lb/hr, lb/day, and lb/twelve month rolling average emission. SO_x emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

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32. Permittee shall maintain the following records for the GTE: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing; emission measurements; total daily and rolling twelve month average hours of operation; hourly quantity of fuel used and gross three hour average operating load. [District Rules 2201 & 4703] Federally Enforceable Through Title V Permit
33. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period during which a CEMS was inoperative. [District Rules 2201 & 4703, and PSD Permit (SJ 99-03) X.I.1] Federally Enforceable Through Title V Permit
34. Permittee shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001] Federally Enforceable Through Title V Permit
35. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
37. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
38. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and PSD Permit (SJ 99-03) X.I.3] Federally Enforceable Through Title V Permit
40. The combined annual emissions rate from all three CTGs and emergency engines S-3636-7-4 & -12-41 based on 12-month rolling average, must not exceed 344,485 lbs NOx and 1,140,000 lbs CO. [PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
41. The annual SOx emissions from each CTG, based on 12-month rolling average, must not exceed 28,170 lbs. [PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
42. During the hot startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 107 lbs of NOx or 903 lbs of CO in any one hour. Hot startup means a startup when the combustion turbine has been in operation during the preceding 8 hours and duration of hot start-ups shall not exceed 1 hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
43. During the warm startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 119 lbs of NOx or 1021 lbs of CO in any one hour. Warm startup means a startup that is not a hot or cold startup and duration of warm startups shall not exceed 2.5 hours. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
44. During the Shutdown of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 58.5 lbs of NOx or 222.5 lbs of CO in any one hour. Shutdown shall be defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased and duration of shutdowns shall not exceed one half hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit

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These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

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45. Total number of start-ups and shut-downs for the facility shall not exceed 674 events per year. [PSD Permit (SJ 99-03) X.G.6] Federally Enforceable Through Title V Permit
46. Any excess emission indicated by the CEM system must be considered a violation of the applicable emission limit in the PSD permit. [PSD Permit (SJ 99-03) X.I.4] Federally Enforceable Through Title V Permit
47. The quality assurance project plan used by the Permittee for the certification and operation of the continuous emissions monitors, which meets the requirements of 40 CFR Part 60, Appendix F, must be available upon request to EPA. [PSD Permit (SJ 99-03) X.I.5] Federally Enforceable Through Title V Permit

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

S-3636-2-4 Jun 5 2013 3:13PM -- TORID

San Joaquin Valley Air Pollution Control District

PERMIT UNIT: S-3636-3-4

EXPIRATION DATE: 02/29/2016

EQUIPMENT DESCRIPTION:

168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #1 AND 90 MW STEAM TURBINE #2

PERMIT UNIT REQUIREMENTS

1. Combustion turbine and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
2. Combustion turbine engine(GTE) shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
3. Heat recovery steam generator (HRSG) exhaust duct downstream of the SCR unit shall be equipped with continuously recording emissions monitors (CEM) for NOx, CO, and O2. All CEMs shall be dedicated to this unit and shall meet the requirements of 40 CFR Part 60 Appendices B & F (for CO), and 40 CFR Part 75 (for NOx and O2), and shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns, provided the CEM(s) pass the relative accuracy requirements for startups and shutdown specified herein. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 13, 17 and 18. [District Rule 2201 and PSD Permit (SJ 99-03) X.H.1] Federally Enforceable Through Title V Permit
4. HRSG exhaust duct shall be equipped with a continuously recording emission monitor upstream of the SCR unit for measuring the NOx concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District Rule 2201] Federally Enforceable Through Title V Permit
5. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
6. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.3] Federally Enforceable Through Title V Permit
7. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

S-3636-3-4 : Jun 5 2013 3:13PM -- TORID

9. GTE shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
10. Cold startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits in condition 15. Cold startup means a startup when the combustion turbine has not been in operation during the preceding 72 hours. Duration of the cold startups shall not exceed 3 hours. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.5] Federally Enforceable Through Title V Permit
11. Only one of GTEs S-3636-1, '2 or '3 shall be in startup at any one time. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.2] Federally Enforceable Through Title V Permit
12. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit
13. During the cold startup GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) - 130 lb, VOC - 273 lb or CO - 1235 lb, in any one hour. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
14. By two hours after turbine initial firing, GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) - 12.2 ppmv @ 15% O2 or CO - 25 ppmv @ 15% O2. [District Rule 4703] Federally Enforceable Through Title V Permit
15. Emission rates from GTE, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 17.03 lb/hr and 2.5 ppmvd @ 15% O2, VOC - 2.0 ppmvd @ 15% O2, CO - 24.92 lb/hr and 6 ppmvd @ 15% O2 or ammonia - 10 ppmvd @ 15% O2. NOx (as NO2) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4703 and PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
16. Emission rates from the GTE shall not exceed either of the following: PM10 - 9.0 lb/hr and SOx (as SO2) - 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201, 4001, and PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
17. On any day when a startup or shutdown occurs, emission rates from GTE shall not exceed any of the following: PM10 - 216 lb/day, SOx (as SO2) - 84 lb/day, NOx (as NO2) - 450 lb/day, VOC - 355 lb/day or CO - 2,113 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
18. Combined annual emissions from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 - 224,343 lb/year, SOx (as SO2) - 84,780 lb/year, NOx (as NO2) - 344,484 lb/year, VOC - 227,619 lb/year or CO - 1,220,166 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Combined annual emissions of all hazardous air pollutants (HAPS) from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 25 tons/year. Combined annual emissions of any single HAP from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 10 tons/year. [District Rule 4002] Federally Enforceable Through Title V Permit
20. Each one-hour period shall commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. [District Rule 2201] Federally Enforceable Through Title V Permit
21. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve-consecutive-month rolling average emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE
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22. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O₂ = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NO_x concentration ppmv at 15% O₂ across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH₃ CEM, the permittee must submit a monitoring plan for District review and approval. [District Rule 4102]
23. Compliance with the short term emission limits (ppmv @ 15% O₂ and lb/hr) shall be demonstrated annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NO_x: ppmvd @ 15% O₂ and lb/hr, CO: ppmvd @ 15% O₂ and lb/hr, VOC: ppmvd @ 15% O₂ and lb/hr, PM₁₀: lb/hr, and ammonia: ppmvd @ 15% O₂. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.1] Federally Enforceable Through Title V Permit
24. Compliance with the startup NO_x, CO, and VOC mass emission limits shall be demonstrated for one of the GTEs (S-3636-1, '2, or '3) at least once every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. CEM relative accuracy shall be determined during startup source testing in accordance with methodology approved by the District. If CEM data is not certifiable to determine compliance with NO_x and CO startup emissions limits, then source testing to measure startup NO_x and CO mass emissions rates shall be conducted at least once every 12 months. [District Rule 1081] Federally Enforceable Through Title V Permit
25. Based on the initial speciated HAPS and total VOC source test conducted for one of the GTEs (S-3636-1, '2 or '3), Pastoria shall correlate the total HAPS emissions rate and the single highest HAP emission rate to the VOC mass emission determined during the speciated HAPS source test. Annual compliance with the HAPS emissions limit (25 tpy all HAPS or 10 tpy any single HAP) shall be by the combined VOC emissions rates for the GTEs (S-3636-1, '2 and '3) determined during annual compliance source testing and the correlation between VOC emissions and HAP(S). [District Rule 4002] Federally Enforceable Through Title V Permit
26. Compliance with natural gas sulfur content limit shall be demonstrated periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 2540 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
27. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
28. Source test plans for seven-year source tests shall include a method for measuring the VOC/CO surrogate relationship that will be used to demonstrate compliance with VOC lb/hr, lb/day, and lb/twelve month rolling emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
29. The following test methods shall be used PM₁₀: EPA method 5 (front half and back half), NO_x: EPA Method 7E or 20, CO: EPA method 10 or 10B, O₂: EPA Method 3, 3A, or 20, VOC: EPA method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, 4703, and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
30. The permittee shall maintain hourly records of NO_x, CO, and ammonia emission concentrations (ppmv @ 15% O₂), and hourly, daily, and twelve month rolling average records of NO_x and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by the CO CEM data and the VOC/CO relationship determined by annual CO and VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit
31. The permittee shall maintain records of SO_x lb/hr, lb/day, and lb/twelve month rolling average emission. SO_x emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

S-3636-3-4 Jun 5 2013 3:13PM -- TORID

32. Permittee shall maintain the following records for the GTE: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing; emission measurements; total daily and rolling twelve month average hours of operation; hourly quantity of fuel used and gross three hour average operating load. [District Rules 2201 & 4703] Federally Enforceable Through Title V Permit
33. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period during which a CEMS was inoperative. [District Rules 2201 & 4703, and PSD Permit (SJ 99-03) X.I.1] Federally Enforceable Through Title V Permit
34. Permittee shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001] Federally Enforceable Through Title V Permit
35. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
36. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
37. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
38. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and PSD Permit (SJ 99-03) X.I.3] Federally Enforceable Through Title V Permit
40. The combined annual emissions rate from all three CTGs and emergency engines S-3636-7-4 & -12-1, based on 12-month rolling average, must not exceed 344,485 lbs NOx and 1,140,000 lbs CO. [PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
41. The annual SOx emissions from each CTG, based on 12-month rolling average, must not exceed 28,170 lbs. [PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
42. During the hot startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 107 lbs of NOx or 903 lbs of CO in any one hour. Hot startup means a startup when the combustion turbine has been in operation during the preceding 8 hours and duration of hot start-ups shall not exceed 1 hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
43. During the warm startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 119 lbs of NOx or 1021 lbs of CO in any one hour. Warm startup means a startup that is not a hot or cold startup and duration of warm startups shall not exceed 2.5 hours. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
44. During the Shutdown of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 58.5 lbs of NOx or 222.5 lbs of CO in any one hour. Shutdown shall be defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased and duration of shutdowns shall not exceed one half hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit

PERMIT UNIT REQUIREMENTS CONTINUE ON NEXT PAGE

These terms and conditions are part of the Facility-wide Permit to Operate.

45. Total number of start-ups and shut-downs for the facility shall not exceed 674 events per year. [PSD Permit (SJ 99-03) X.G.6] Federally Enforceable Through Title V Permit
46. Any excess emission indicated by the CEM system must be considered a violation of the applicable emission limit in the PSD permit. [PSD Permit (SJ 99-03) X.I.4] Federally Enforceable Through Title V Permit
47. The quality assurance project plan used by the Permittee for the certification and operation of the continuous emissions monitors, which meets the requirements of 40 CFR Part 60, Appendix F, must be available upon request to EPA. [PSD Permit (SJ 99-03) X.I.5] Federally Enforceable Through Title V Permit

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Facility Name: PASTORIA ENERGY FACILITY, LLC

Location: TEJON RANCH 30 MILES S OF BAKERSFIELD, AND 6.5 MILES E OF GRAPEVINE, RANCHO EL TEJON, CA

S-3636-3-4 Jun 5 2013 3:13PM -- TORID

Appendix B
Rule 4703 Section 5.3.3 Discussion



CALPINE CORPORATION

PASTORIA ENERGY FACILITY, LLC
PO BOX 866
39789 EDMONSTON PUMPING PLANT ROAD
LEBEC, CA 93243
(661)-282-4405
(661)-282-4426 (F)

RECEIVED

APR 17 2013

SJVAPCD
Southern Region

April 15, 2013

Dave Warner
Director of Permit Services
San Joaquin Valley Air Pollution Control District
1990 E. Gettysburg Ave.
Fresno, CA 93726

Subject: Pastoria Energy Facility Expansion
Facility Number: S-3636
Request for Permit Amendment

Dear Mr. Warner:

Pastoria Energy Facility L.L.C. (PEF) is proposing revisions to the conditions of the Permit to Operate issued by the District for the three GE 7FA gas turbines. The gas turbines (permit units S-3636-1-4, -2-4 and -3-4) are having difficulty meeting the 25 ppmvd @ 15% O₂ CO limit in Condition 14 within two hours after turbine initial firing during cold starts. The attached application requests an amendment to each permit in order to eliminate the CO limit in the condition. No change to the NO_x limit of Condition 14 is being requested.

Since the proposed duration of the cold startups will exceed the two-hour startup time specified in Section 5.3.1.1 of Rule 4703, we understand that the facility must provide justification and provide additional information regarding why the exemption is needed to meet the requirements of Section 5.3.3. Demonstration of compliance with Rule 4703 and other applicable District rules is provided below.

Compliance with Rule 4703, Section 5.3.3

Section 5.3.3 states that at a minimum, a justification for the increased duration of startups shall include the items outlined below.

1. A clear identification of the control technologies or strategies to be utilized

The control technologies and strategies utilized to minimize emissions during the startup period are listed below.

- GE 7FA gas turbine technology
- Dry low-NO_x combustors in the CTG

turbine rotor to casing rotational contact due to differences in thermal growth between the rotor and casings. The control system limits gas turbine load to control the steam temperature. Any manual override of the gas turbine load limit by the operator reduces the life expectancy of the steam turbine.

As discussed above, at the lower load points, each gas turbine is tuned for combustion stability and not for emissions performance, so uncontrolled emissions at low loads are much higher than uncontrolled emissions at typical operating loads (above about 50%). The allowable rate of temperature increase at the steam turbine is the limiting factor in determining how quickly the gas turbine can achieve higher loads. This, in turn, limits how quickly the gas turbine combustor can be brought up to this minimum load point and how soon CO emissions can be reduced below 25 ppm.

6. The basis for the requested additional duration

The description of activities above, steam turbine manufacturer starting and loading procedures, and PEF's operating experience demonstrate that the minimum time required for each gas turbine/HRSG to meet the 25 ppm limit of Section 5.3.1.1 under cold start conditions is three hours.

Since the facility has demonstrated compliance and provided all the information required by Section 5.3.3.2, PEF requests the District's approval of the proposed amendments as consistent with the requirement District Rule 4703.

Hourly, Daily, and Annual CO Limits

PEF is requesting deletion of the CO concentration limit during startup in Condition 14 and does not need to change any other hourly limits or any daily or annual emission limits for the gas turbine.

Best Available Control Technology Assessment

Best Available Control Technology (BACT) requirements do not apply to the proposed modification because the modification will not result in any increase in daily emissions (Rule 2201, Section 4.1.2).

Changes to PSD Permit

No changes are being proposed to the PSD permit issued for the facility by U.S. EPA. The facility will continue to comply with the following limits applicable during cold startups:

- Combined emissions from any one CTG and HRSG must not exceed 1,234 pounds of CO in any one hour (Special Condition X.G.1.); and
- Duration of cold startups must not exceed 3 hours (Special Condition X.G.5).

Appendix C

Draft ATCs

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-3636-1-5

LEGAL OWNER OR OPERATOR: PASTORIA ENERGY FACILITY, LLC
MAILING ADDRESS: 39789 EDMONSTON PUMPING PLANT RD
PO BOX 866
LEBEC, CA 93243-0866

LOCATION: TEJON RANCH 30 MILES S OF BAKERSFIELD
AND 6.5 MILES E OF GRAPEVINE
RANCHO EL TEJON, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #1 WITH DRY LOW NOX COMBUSTORS AND SELECTIVE CATALYTIC REDUCTION, WITH HRSG #1 AND 185 MW STEAM TURBINE #1 IN A TWO ON ONE COMBINED CYCLE WITH GAS TURBINE ENGINE S-3636-2: REMOVE REDUNDANT LIMITATION ON STARTUP DURATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Combustion turbine and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combustion turbine engine(GTE) shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201 and PSD Permit (SJ 99-03) X.K.] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director APCO

DAVID WARNER, Director of Permit Services

S-3636-1-5: Jun 20 2013 2:39PM -- KARRSR : Joint Inspection NOT Required

Southern Regional Office • 34946 Elvover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

5. Heat recovery steam generator (HRSG) exhaust duct downstream of the SCR unit shall be equipped with continuously recording emissions monitors (CEM) for NO_x, CO, and O₂. All CEMs shall be dedicated to this unit and shall meet the requirements of 40 CFR Part 60 Appendices B & F (for CO), and 40 CFR Part 75 (for NO_x and O₂), and shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns, provided the CEM(s) pass the relative accuracy requirements for startups and shutdown specified herein. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 13, 17 and 18. [District Rule 2201 and PSD Permit (SJ 99-03) X.H.1] Federally Enforceable Through Title V Permit
6. HRSG exhaust duct shall be equipped with a continuously recording emission monitor upstream of the SCR unit for measuring the NO_x concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.3] Federally Enforceable Through Title V Permit
9. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NO_x and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit
11. GTE shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and PSD Permit (SJ 99-03) X.K.] Federally Enforceable Through Title V Permit
12. Cold startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits in condition 15. Cold startup means a startup when the combustion turbine has not been in operation during the preceding 72 hours. Duration of the cold startups shall not exceed 3 hours. [District Rules 2201 and 4703 and PSD Permit (SJ 99-03) X.G.5] Federally Enforceable Through Title V Permit
13. Only one of GTEs S-3636-1, '2 or '3 shall be in startup at any one time. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.2] Federally Enforceable Through Title V Permit
14. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit
15. During the cold startup GTE exhaust emissions shall not exceed any of the following: NO_x (as NO₂) - 130 lb, VOC - 273 lb or CO - 1235 lb, in any one hour. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
16. Emission rates from GTE, except during startup and/or shutdown, shall not exceed any of the following: NO_x (as NO₂) - 17.03 lb/hr and 2.5 ppmvd @ 15% O₂, VOC - 2.0 ppmvd @ 15% O₂, CO - 24.92 lb/hr and 6 ppmvd @ 15% O₂ or ammonia - 10 ppmvd @ 15% O₂. NO_x (as NO₂) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4703 and PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit

17. Emission rates from the GTE shall not exceed either of the following: PM10 - 9.0 lb/hr and SOx (as SO2) - 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201, 4001, and PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
18. On any day when a startup or shutdown occurs, emission rates from GTE shall not exceed any of the following: PM10 - 216 lb/day, SOx (as SO2) - 84 lb/day, NOx (as NO2) - 450 lb/day, VOC - 355 lb/day or CO - 2,113 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Combined annual emissions from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 - 224,343 lb/year, SOx (as SO2) - 84,780 lb/year, NOx (as NO2) - 344,484 lb/year, VOC - 227,619 lb/year or CO - 1,220,166 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Combined annual emissions of all hazardous air pollutants (HAPS) from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 25 tons/year. Combined annual emissions of any single HAP from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 10 tons/year. [District Rule 4002] Federally Enforceable Through Title V Permit
21. Each one-hour period shall commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve-consecutive-month rolling average emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = $((a - (b \times c / 1,000,000)) \times 1,000,000 / b) \times d$, where a = ammonia injection rate (lb/hr) / 17 (lb/lb. mol), b = dry exhaust gas flow rate (lb/hr) / (29 (lb/lb. mol)), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH3 CEM, the permittee must submit a monitoring plan for District review and approval. [District Rule 4102]
24. Compliance with the short term emission limits (ppmv @ 15% O2 and lb/hr) shall be demonstrated annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.1] Federally Enforceable Through Title V Permit
25. Compliance with the startup NOx, CO, and VOC mass emission limits shall be demonstrated for one of the GTEs (S-3636-1, '2, or '3) at least once every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. CEM relative accuracy shall be determined during startup source testing in accordance with methodology approved by the District. If CEM data is not certifiable to determine compliance with NOx and CO startup emissions limits, then source testing to measure startup NOx and CO mass emissions rates shall be conducted at least once every 12 months. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Based on the initial speciated HAPS and total VOC source test conducted for one of the GTEs (S-3636-1, '2 or '3), Pastoria shall correlate the total HAPS emissions rate and the single highest HAP emission rate to the VOC mass emission determined during the speciated HAPS source test. Annual compliance with the HAPS emissions limit (25 tpy all HAPS or 10 tpy any single HAP) shall be by the combined VOC emissions rates for the GTEs (S-3636-1, '2 and '3) determined during annual compliance source testing and the correlation between VOC emissions and HAP(S). [District Rule 4002] Federally Enforceable Through Title V Permit

27. Compliance with natural gas sulfur content limit shall be demonstrated periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 2540 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
28. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
29. Source test plans for seven-year source tests shall include a method for measuring the VOC/CO surrogate relationship that will be used to demonstrate compliance with VOC lb/hr, lb/day, and lb/twelve month rolling emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
30. The following test methods shall be used PM10: EPA method 5 (front half and back half), NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, 4703, and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
31. The permittee shall maintain hourly records of NOx, CO, and ammonia emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by the CO CEM data and the VOC/CO relationship determined by annual CO and VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit
32. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
33. Permittee shall maintain the following records for the GTE: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing; emission measurements; total daily and rolling twelve month average hours of operation; hourly quantity of fuel used and gross three hour average operating load. [District Rules 2201 & 4703] Federally Enforceable Through Title V Permit
34. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period during which a CEMS was inoperative. [District Rules 2201 & 4703, and PSD Permit (SJ 99-03) X.I.1] Federally Enforceable Through Title V Permit
35. Permittee shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001] Federally Enforceable Through Title V Permit
36. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
37. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
38. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit

40. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and PSD Permit (SJ 99-03) X.I.3] Federally Enforceable Through Title V Permit
41. The combined annual emissions rate from all three CTGs and emergency engines S-3636-7-4 & -12-1, based on 12-month rolling average, must not exceed 344,485 lbs NO_x and 1,140,000 lbs CO. [PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
42. The annual SO_x emissions from each CTG, based on 12-month rolling average, must not exceed 28,170 lbs. [PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
43. During the hot startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 107 lbs of NO_x or 903 lbs of CO in any one hour. Hot startup means a startup when the combustion turbine has been in operation during the preceding 8 hours and duration of hot start-ups shall not exceed 1 hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
44. During the warm startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 119 lbs of NO_x or 1021 lbs of CO in any one hour. Warm startup means a startup that is not a hot or cold startup and duration of warm startups shall not exceed 2.5 hours. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
45. During the Shutdown of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 58.5 lbs of NO_x or 222.5 lbs of CO in any one hour. Shutdown shall be defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased and duration of shutdowns shall not exceed one half hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
46. Total number of start-ups and shut-downs for the facility shall not exceed 674 events per year. [PSD Permit (SJ 99-03) X.G.6] Federally Enforceable Through Title V Permit
47. Any excess emission indicated by the CEM system must be considered a violation of the applicable emission limit in the PSD permit. [PSD Permit (SJ 99-03) X.I.4] Federally Enforceable Through Title V Permit
48. The quality assurance project plan used by the Permittee for the certification and operation of the continuous emissions monitors, which meets the requirements of 40 CFR Part 60, Appendix F, must be available upon request to EPA. [PSD Permit (SJ 99-03) X.I.5] Federally Enforceable Through Title V Permit

DRAFT

San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-3636-2-5

LEGAL OWNER OR OPERATOR: PASTORIA ENERGY FACILITY, LLC
MAILING ADDRESS: 39789 EDMONSTON PUMPING PLANT RD
PO BOX 866
LEBEC, CA 93243-0866

LOCATION: TEJON RANCH 30 MILES S OF BAKERSFIELD
AND 6.5 MILES E OF GRAPEVINE
RANCHO EL TEJON, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #2 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #2, AND A SINGLE 185 MW STEAM TURBINE #1 SHARED WITH GAS TURBINE ENGINE S-3636-1: REMOVE REDUNDANT LIMITATION ON STARTUP DURATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Combustion turbine and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combustion turbine engine(GTE) shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201 and PSD Permit (SJ 99-03) X.K.] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU **MUST** NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Seyed Sadredin, Executive Director, APCO

DAVID WARNER, Director of Permit Services

S-3636-2-5 : Jun 20 2013 2:14PM -- KARRSR : Joint Inspection NOT Required

Southern Regional Office • 34946 Elvover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

5. Heat recovery steam generator (HRSG) exhaust duct downstream of the SCR unit shall be equipped with continuously recording emissions monitors (CEM) for NO_x, CO, and O₂. All CEMs shall be dedicated to this unit and shall meet the requirements of 40 CFR Part 60 Appendices B & F (for CO), and 40 CFR Part 75 (for NO_x and O₂), and shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns, provided the CEM(s) pass the relative accuracy requirements for startups and shutdown specified herein. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 13, 17 and 18. [District Rule 2201 and PSD Permit (SJ 99-03) X.H.1] Federally Enforceable Through Title V Permit
6. HRSG exhaust duct shall be equipped with a continuously recording emission monitor upstream of the SCR unit for measuring the NO_x concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District Rule 2201] Federally Enforceable Through Title V Permit
7. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
8. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.3] Federally Enforceable Through Title V Permit
9. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NO_x and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
10. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit
11. GTE shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
12. Cold startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits in condition 15. Cold startup means a startup when the combustion turbine has not been in operation during the preceding 72 hours. Duration of the cold startups shall not exceed 3 hours. [District Rules 2201 and 4703 and PSD Permit (SJ 99-03) X.G.5] Federally Enforceable Through Title V Permit
13. Only one of GTEs S-3636-1, '2 or '3 shall be in startup at any one time. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.2] Federally Enforceable Through Title V Permit
14. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit
15. During the cold startup GTE exhaust emissions shall not exceed any of the following: NO_x (as NO₂) - 130 lb, VOC - 273 lb or CO - 1235 lb, in any one hour. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
16. Emission rates from GTE, except during startup and/or shutdown, shall not exceed any of the following: NO_x (as NO₂) - 17.03 lb/hr and 2.5 ppmvd @ 15% O₂, VOC - 2.0 ppmvd @ 15% O₂, CO - 24.92 lb/hr and 6 ppmvd @ 15% O₂ or ammonia - 10 ppmvd @ 15% O₂. NO_x (as NO₂) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4703 and PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit

17. Emission rates from the GTE shall not exceed either of the following: PM10 - 9.0 lb/hr and SOx (as SO2) - 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201, 4001, and PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
18. On any day when a startup or shutdown occurs, emission rates from GTE shall not exceed any of the following: PM10 - 216 lb/day, SOx (as SO2) - 84 lb/day, NOx (as NO2) - 450 lb/day, VOC - 355 lb/day or CO - 2,113 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
19. Combined annual emissions from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 - 224,343 lb/year, SOx (as SO2) - 84,780 lb/year, NOx (as NO2) - 344,484 lb/year, VOC - 227,619 lb/year or CO - 1,220,166 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
20. Combined annual emissions of all hazardous air pollutants (HAPS) from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 25 tons/year. Combined annual emissions of any single HAP from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 10 tons/year. [District Rule 4002] Federally Enforceable Through Title V Permit
21. Each one-hour period shall commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. [District Rule 2201] Federally Enforceable Through Title V Permit
22. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve-consecutive-month rolling average emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit
23. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O2 = $((a - (b \times c / 1,000,000)) \times 1,000,000 / b) \times d$, where a = ammonia injection rate (lb/hr) / 17 (lb/lb. mol), b = dry exhaust gas flow rate (lb/hr) / (29 (lb/lb. mol)), c = change in measured NOx concentration ppmv at 15% O2 across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH3 CEM, the permittee must submit a monitoring plan for District review and approval. [District Rule 4102]
24. Compliance with the short term emission limits (ppmv @ 15% O2 and lb/hr) shall be demonstrated annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NOx: ppmvd @ 15% O2 and lb/hr, CO: ppmvd @ 15% O2 and lb/hr, VOC: ppmvd @ 15% O2 and lb/hr, PM10: lb/hr, and ammonia: ppmvd @ 15% O2. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.1] Federally Enforceable Through Title V Permit
25. Compliance with the startup NOx, CO, and VOC mass emission limits shall be demonstrated for one of the GTEs (S-3636-1, '2, or '3) at least once every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. CEM relative accuracy shall be determined during startup source testing in accordance with methodology approved by the District. If CEM data is not certifiable to determine compliance with NOx and CO startup emissions limits, then source testing to measure startup NOx and CO mass emissions rates shall be conducted at least once every 12 months. [District Rule 1081] Federally Enforceable Through Title V Permit
26. Based on the initial speciated HAPS and total VOC source test conducted for one of the GTEs (S-3636-1, '2 or '3), Pastoria shall correlate the total HAPS emissions rate and the single highest HAP emission rate to the VOC mass emission determined during the speciated HAPS source test. Annual compliance with the HAPS emissions limit (25 tpy all HAPS or 10 tpy any single HAP) shall be by the combined VOC emissions rates for the GTEs (S-3636-1, '2 and '3) determined during annual compliance source testing and the correlation between VOC emissions and HAP(S). [District Rule 4002] Federally Enforceable Through Title V Permit

27. Compliance with natural gas sulfur content limit shall be demonstrated periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 2540 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
28. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
29. Source test plans for seven-year source tests shall include a method for measuring the VOC/CO surrogate relationship that will be used to demonstrate compliance with VOC lb/hr, lb/day, and lb/twelve month rolling emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
30. The following test methods shall be used PM10: EPA method 5 (front half and back half), NOx: EPA Method 7E or 20, CO: EPA method 10 or 10B, O2: EPA Method 3, 3A, or 20, VOC: EPA method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, 4703, and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
31. The permittee shall maintain hourly records of NOx, CO, and ammonia emission concentrations (ppmv @ 15% O2), and hourly, daily, and twelve month rolling average records of NOx and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by the CO CEM data and the VOC/CO relationship determined by annual CO and VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit
32. The permittee shall maintain records of SOx lb/hr, lb/day, and lb/twelve month rolling average emission. SOx emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
33. Permittee shall maintain the following records for the GTE: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing; emission measurements; total daily and rolling twelve month average hours of operation; hourly quantity of fuel used and gross three hour average operating load. [District Rules 2201 & 4703] Federally Enforceable Through Title V Permit
34. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period during which a CEMS was inoperative. [District Rules 2201 & 4703, and PSD Permit (SJ 99-03) X.I.1] Federally Enforceable Through Title V Permit
35. Permittee shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001] Federally Enforceable Through Title V Permit
36. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
37. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
38. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
39. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit

40. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and PSD Permit (SJ 99-03) X.I.3] Federally Enforceable Through Title V Permit
41. The combined annual emissions rate from all three CTGs and emergency engines S-3636-7-4 & -12-41 based on 12-month rolling average, must not exceed 344,485 lbs NOx and 1,140,000 lbs CO. [PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
42. The annual SOx emissions from each CTG, based on 12-month rolling average, must not exceed 28,170 lbs. [PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
43. During the hot startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 107 lbs of NOx or 903 lbs of CO in any one hour. Hot startup means a startup when the combustion turbine has been in operation during the preceding 8 hours and duration of hot start-ups shall not exceed 1 hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
44. During the warm startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 119 lbs of NOx or 1021 lbs of CO in any one hour. Warm startup means a startup that is not a hot or cold startup and duration of warm startups shall not exceed 2.5 hours. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
45. During the Shutdown of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 58.5 lbs of NOx or 222.5 lbs of CO in any one hour. Shutdown shall be defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased and duration of shutdowns shall not exceed one half hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
46. Total number of start-ups and shut-downs for the facility shall not exceed 674 events per year. [PSD Permit (SJ 99-03) X.G.6] Federally Enforceable Through Title V Permit
47. Any excess emission indicated by the CEM system must be considered a violation of the applicable emission limit in the PSD permit. [PSD Permit (SJ 99-03) X.I.4] Federally Enforceable Through Title V Permit
48. The quality assurance project plan used by the Permittee for the certification and operation of the continuous emissions monitors, which meets the requirements of 40 CFR Part 60, Appendix F, must be available upon request to EPA. [PSD Permit (SJ 99-03) X.I.5] Federally Enforceable Through Title V Permit

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San Joaquin Valley
Air Pollution Control District

AUTHORITY TO CONSTRUCT

ISSUANCE DATE: DRAFT

PERMIT NO: S-3636-3-5

LEGAL OWNER OR OPERATOR: PASTORIA ENERGY FACILITY, LLC
MAILING ADDRESS: 39789 EDMONSTON PUMPING PLANT RD
PO BOX 866
LEBEC, CA 93243-0866

LOCATION: TEJON RANCH 30 MILES S OF BAKERSFIELD
AND 6.5 MILES E OF GRAPEVINE
RANCHO EL TEJON, CA

EQUIPMENT DESCRIPTION:

MODIFICATION OF 168 MW NOMINALLY RATED GENERAL ELECTRIC 7FA NATURAL GAS FIRED GAS TURBINE ENGINE/ELECTRICAL GENERATOR #3 WITH DRY LOW NOX COMBUSTORS, SELECTIVE CATALYTIC REDUCTION, HRSG #1 AND 90 MW STEAM TURBINE #2: REMOVE REDUNDANT LIMITATION ON STARTUP DURATION

CONDITIONS

1. {1830} This Authority to Construct serves as a written certificate of conformity with the procedural requirements of 40 CFR 70.7 and 70.8 and with the compliance requirements of 40 CFR 70.6(c). [District Rule 2201] Federally Enforceable Through Title V Permit
2. {1831} Prior to operating with modifications authorized by this Authority to Construct, the facility shall submit an application to modify the Title V permit with an administrative amendment in accordance with District Rule 2520 Section 5.3.4. [District Rule 2520, 5.3.4] Federally Enforceable Through Title V Permit
3. Combustion turbine and electrical generator lube oil vents shall be equipped with mist eliminators to maintain visible emissions from lube oil vents no greater than 5% opacity, except for three minutes in any hour. [District Rule 2201] Federally Enforceable Through Title V Permit
4. Combustion turbine engine(GTE) shall be equipped with continuously recording fuel gas flowmeter. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit

CONDITIONS CONTINUE ON NEXT PAGE

YOU MUST NOTIFY THE DISTRICT COMPLIANCE DIVISION AT (661) 392-5500 WHEN CONSTRUCTION IS COMPLETED AND PRIOR TO OPERATING THE EQUIPMENT OR MODIFICATIONS AUTHORIZED BY THIS AUTHORITY TO CONSTRUCT. This is NOT a PERMIT TO OPERATE. Approval or denial of a PERMIT TO OPERATE will be made after an inspection to verify that the equipment has been constructed in accordance with the approved plans, specifications and conditions of this Authority to Construct, and to determine if the equipment can be operated in compliance with all Rules and Regulations of the San Joaquin Valley Unified Air Pollution Control District. Unless construction has commenced pursuant to Rule 2050, this Authority to Construct shall expire and application shall be cancelled two years from the date of issuance. The applicant is responsible for complying with all laws, ordinances and regulations of all other governmental agencies which may pertain to the above equipment.

Sayed Sadredin, Executive Director / APCO

DAVID WARNER, Director of Permit Services

S-3636-3-5: Jun 20 2013 2:22PM - KARRSR : Joint Inspection NOT Required

Southern Regional Office • 34946 Flyover Court • Bakersfield, CA 93308 • (661) 392-5500 • Fax (661) 392-5585

5. Heat recovery steam generator (HRSG) exhaust duct downstream of the SCR unit shall be equipped with continuously recording emissions monitors (CEM) for NO_x, CO, and O₂. All CEMs shall be dedicated to this unit and shall meet the requirements of 40 CFR Part 60 Appendices B & F (for CO), and 40 CFR Part 75 (for NO_x and O₂), and shall be capable of monitoring emissions during normal operating conditions and during startups and shutdowns, provided the CEM(s) pass the relative accuracy requirements for startups and shutdown specified herein. If relative accuracy of CEM(s) cannot be certified during startup conditions, CEM results during startup and shutdown events shall be replaced with startup emission rates obtained during source testing to determine compliance with emission limits in conditions 13, 17 and 18. [District Rule 2201 and PSD Permit (SJ 99-03) X.H.1] Federally Enforceable Through Title V Permit
6. Results of continuous emissions monitoring shall be reduced according to the procedure established in 40 CFR, Part 51, Appendix P, paragraphs 5.0 through 5.3. 3, or by other methods deemed equivalent by mutual agreement with the District, the ARB, and the EPA. [District Rule 1080] Federally Enforceable Through Title V Permit
7. Audits of continuous emission monitors shall be conducted quarterly, except during quarters in which relative accuracy and total accuracy testing is performed, in accordance with EPA guidelines. The District shall be notified prior to completion of the audits. Audit reports shall be submitted along with quarterly compliance reports to the District. [District Rule 1080] Federally Enforceable Through Title V Permit
8. The permittee shall comply with the applicable requirements for quality assurance testing and maintenance of the continuous emission monitor equipment in accordance with the procedures and guidance specified in 40 CFR Part 60, Appendix F. [District Rule 1080] Federally Enforceable Through Title V Permit
9. The permittee shall submit a written report to the APCO for each calendar quarter, within 30 days of the end of the quarter, including: time intervals, data and magnitude of excess emissions, nature and cause of excess (if known), corrective actions taken and preventive measures adopted; averaging period used for data reporting shall correspond to the averaging period for each respective emission standard; applicable time and date of each period during which the CEM was inoperative (except for zero and span checks) and the nature of system repairs and adjustments; and a negative declaration when no excess emissions occurred. [District Rule 1080 and PSD Permit (SJ 99-03) X.I.3] Federally Enforceable Through Title V Permit
10. The combined annual emissions rate from all three CTGs and emergency engines S-3636-7-4 & -12-1, based on 12-month rolling average, must not exceed 344,485 lbs NO_x and 1,140,000 lbs CO. [PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
11. The annual SO_x emissions from each CTG, based on 12-month rolling average, must not exceed 28,170 lbs. [PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
12. During the hot startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 107 lbs of NO_x or 903 lbs of CO in any one hour. Hot startup means a startup when the combustion turbine has been in operation during the preceding 8 hours and duration of hot start-ups shall not exceed 1 hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
13. HRSG exhaust duct shall be equipped with a continuously recording emission monitor upstream of the SCR unit for measuring the NO_x concentration for the purposes of calculating ammonia slip. Permittee shall check, record, and quantify the calibration drift (CD) at two concentration values at least once daily (approximately 24 hours). The calibration shall be adjusted whenever the daily zero or high-level CD exceeds 5%. If either the zero or high-level CD exceeds 5% for five consecutive daily periods, the analyzer shall be deemed out-of-control. If either the zero or high-level CD exceeds 10% during any CD check, analyzer shall be deemed out-of-control. If the analyzer is out-of-control, the permittee shall take appropriate corrective action and then repeat the CD check. [District Rule 2201] Federally Enforceable Through Title V Permit
14. Ammonia injection grid shall be equipped with operational ammonia flowmeter and injection pressure indicator. [District Rule 2201] Federally Enforceable Through Title V Permit
15. Exhaust stack shall be equipped with permanent provisions to allow collection of stack gas samples consistent with EPA test methods. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.3] Federally Enforceable Through Title V Permit

16. Heat recovery steam generator design shall provide space for additional selective catalytic reduction catalyst and oxidation catalyst if required to meet NOx and CO emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
17. Permittee shall monitor and record exhaust gas temperature at selective catalytic reduction and oxidation catalyst inlets. [District Rule 2201] Federally Enforceable Through Title V Permit
18. GTE shall be fired exclusively on natural gas, consisting primarily of methane and ethane, with a sulfur content no greater than 0.75 grains of sulfur compounds (as S) per 100 dry scf of natural gas. [District Rule 2201 and PSD Permit (SJ 99-03) X.K.] Federally Enforceable Through Title V Permit
19. Cold startup is defined as the period beginning with turbine initial firing until the unit meets the lb/hr and ppmv emission limits in condition 15. Cold startup means a startup when the combustion turbine has not been in operation during the preceding 72 hours. Duration of the cold startups shall not exceed 3 hours. [District Rules 2201 and 4703 and PSD Permit (SJ 99-03) X.G.5] Federally Enforceable Through Title V Permit
20. Only one of GTEs S-3636-1, '2 or '3 shall be in startup at any one time. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.2] Federally Enforceable Through Title V Permit
21. Ammonia shall be injected when the selective catalytic reduction system catalyst temperature exceeds 500 degrees F. Permittee shall monitor and record catalyst temperature during periods of startup. [District Rule 2201] Federally Enforceable Through Title V Permit
22. During the cold startup GTE exhaust emissions shall not exceed any of the following: NOx (as NO2) - 130 lb, VOC - 273 lb or CO - 1235 lb, in any one hour. [District Rule 2201 and PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
23. Emission rates from GTE, except during startup and/or shutdown, shall not exceed any of the following: NOx (as NO2) - 17.03 lb/hr and 2.5 ppmvd @ 15% O2, VOC - 2.0 ppmvd @ 15% O2, CO - 24.92 lb/hr and 6 ppmvd @ 15% O2 or ammonia - 10 ppmvd @ 15% O2. NOx (as NO2) emission limit is a one-hour average. Ammonia emission limit is a twenty-four hour rolling average. All other emission limits are three-hour rolling averages. [District Rules 2201, 4703 and PSD Permit (SJ 99-03) X.D & .E] Federally Enforceable Through Title V Permit
24. Emission rates from the GTE shall not exceed either of the following: PM10 - 9.0 lb/hr and SOx (as SO2) - 3.495 lb/hr. Emission limits are three-hour rolling averages. [District Rules 2201, 4001, and PSD Permit (SJ 99-03) X.F] Federally Enforceable Through Title V Permit
25. On any day when a startup or shutdown occurs, emission rates from GTE shall not exceed any of the following: PM10 - 216 lb/day, SOx (as SO2) - 84 lb/day, NOx (as NO2) - 450 lb/day, VOC - 355 lb/day or CO - 2,113 lb/day. [District Rule 2201] Federally Enforceable Through Title V Permit
26. Combined annual emissions from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed any of the following: PM10 - 224,343 lb/year, SOx (as SO2) - 84,780 lb/year, NOx (as NO2) - 344,484 lb/year, VOC - 227,619 lb/year or CO - 1,220,166 lb/year. [District Rule 2201] Federally Enforceable Through Title V Permit
27. Combined annual emissions of all hazardous air pollutants (HAPS) from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 25 tons/year. Combined annual emissions of any single HAP from GTEs S-3636-1, '2 and '3, calculated on a twelve consecutive month rolling basis, shall not exceed 10 tons/year. [District Rule 4002] Federally Enforceable Through Title V Permit
28. Each one-hour period shall commence on the hour. Each one-hour period in a three-hour rolling average will commence on the hour. The three-hour average will be compiled from the three most recent one-hour periods. Each one-hour period in a twenty-four-hour average for ammonia slip will commence on the hour. [District Rule 2201] Federally Enforceable Through Title V Permit
29. Daily emissions will be compiled for a twenty-four hour period starting and ending at twelve-midnight. Each month in the twelve-consecutive-month rolling average emissions shall commence at the beginning of the first day of the month. The twelve-consecutive-month rolling average emissions to determine compliance with annual emissions limitations shall be compiled from the twelve most recent calendar months. [District Rule 2201] Federally Enforceable Through Title V Permit

30. Compliance with ammonia slip limit shall be demonstrated by using the following calculation procedure: ammonia slip ppmv @ 15% O₂ = ((a-(bxc/1,000,000)) x 1,000,000 / b) x d, where a = ammonia injection rate(lb/hr)/17(lb/lb. mol), b = dry exhaust gas flow rate (lb/hr)/(29(lb/lb. mol), c = change in measured NO_x concentration ppmv at 15% O₂ across catalyst, and d = correction factor. The correction factor shall be derived annually during compliance testing by comparing the measured and calculated ammonia slip. Alternatively, permittee may utilize a continuous in-stack ammonia monitor, acceptable to the District, to monitor compliance. At least 60 days prior to using a NH₃ CEM, the permittee must submit a monitoring plan for District review and approval. [District Rule 4102]
31. Compliance with the short term emission limits (ppmv @ 15% O₂ and lb/hr) shall be demonstrated annually by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm at full load conditions as follows - NO_x: ppmvd @ 15% O₂ and lb/hr, CO: ppmvd @ 15% O₂ and lb/hr, VOC: ppmvd @ 15% O₂ and lb/hr, PM₁₀: lb/hr, and ammonia: ppmvd @ 15% O₂. Sample collection to demonstrate compliance with ammonia emission limit shall be based on three consecutive test runs of thirty minutes each. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.1] Federally Enforceable Through Title V Permit
32. Compliance with the startup NO_x, CO, and VOC mass emission limits shall be demonstrated for one of the GTEs (S-3636-1, '2, or '3) at least once every seven years by District witnessed in situ sampling of exhaust gases by a qualified independent source test firm. CEM relative accuracy shall be determined during startup source testing in accordance with methodology approved by the District. If CEM data is not certifiable to determine compliance with NO_x and CO startup emissions limits, then source testing to measure startup NO_x and CO mass emissions rates shall be conducted at least once every 12 months. [District Rule 1081] Federally Enforceable Through Title V Permit
33. Based on the initial speciated HAPS and total VOC source test conducted for one of the GTEs (S-3636-1, '2 or '3), Pastoria shall correlate the total HAPS emissions rate and the single highest HAP emission rate to the VOC mass emission determined during the speciated HAPs source test. Annual compliance with the HAPS emissions limit (25 tpy all HAPS or 10 tpy any single HAP) shall be by the combined VOC emissions rates for the GTEs (S-3636-1, '2 and '3) determined during annual compliance source testing and the correlation between VOC emissions and HAP(S). [District Rule 4002] Federally Enforceable Through Title V Permit
34. Compliance with natural gas sulfur content limit shall be demonstrated periodically as required by 40 CFR 60 Subpart GG and 40 CFR 75. [District Rules 2540 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit
35. The District must be notified 30 days prior to any compliance source test, and a source test plan must be submitted for approval 15 days prior to testing. Official test results and field data collected by source tests required by conditions on this permit shall be submitted to the District within 60 days of testing. [District Rule 1081 and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
36. Source test plans for seven-year source tests shall include a method for measuring the VOC/CO surrogate relationship that will be used to demonstrate compliance with VOC lb/hr, lb/day, and lb/twelve month rolling emission limits. [District Rule 2201] Federally Enforceable Through Title V Permit
37. The following test methods shall be used PM₁₀: EPA method 5 (front half and back half), NO_x: EPA Method 7E or 20, CO: EPA method 10 or 10B, O₂: EPA Method 3, 3A, or 20, VOC: EPA method 18 or 25, ammonia: BAAQMD ST-1B, and fuel gas sulfur content: ASTM D3246. EPA approved alternative test methods as approved by the District may also be used to address the source testing requirements of this permit. [District Rules 1081, 4001, 4703, and PSD Permit (SJ 99-03) X.C.2] Federally Enforceable Through Title V Permit
38. The permittee shall maintain hourly records of NO_x, CO, and ammonia emission concentrations (ppmv @ 15% O₂), and hourly, daily, and twelve month rolling average records of NO_x and CO emissions. Compliance with the hourly, daily, and twelve month rolling average VOC emission limits shall be demonstrated by the CO CEM data and the VOC/CO relationship determined by annual CO and VOC source tests. [District Rule 2201] Federally Enforceable Through Title V Permit
39. The permittee shall maintain records of SO_x lb/hr, lb/day, and lb/twelve month rolling average emission. SO_x emissions shall be based on fuel use records, natural gas sulfur content, and mass balance calculations. [District Rule 2201 and PSD Permit (SJ 99-03) X.K] Federally Enforceable Through Title V Permit

40. Permittee shall maintain the following records for the GTE: occurrence, duration, and type of any startup, shutdown, or malfunction; performance testing; emission measurements; total daily and rolling twelve month average hours of operation; hourly quantity of fuel used and gross three hour average operating load. [District Rules 2201 & 4703] Federally Enforceable Through Title V Permit
41. Permittee shall maintain the following records for the continuous emissions monitoring system (CEMS): performance testing, evaluations, calibrations, checks, maintenance, adjustments, and any period during which a CEMS was inoperative. [District Rules 2201 & 4703, and PSD Permit (SJ 99-03) X.I.1] Federally Enforceable Through Title V Permit
42. Permittee shall provide notification and record keeping as required under 40 CFR, Part 60, Subpart A, 60.7. [District Rule 4001] Federally Enforceable Through Title V Permit
43. All records required to be maintained by this permit shall be maintained for a period of five years and shall be made readily available for District inspection upon request. [District Rule 2201] Federally Enforceable Through Title V Permit
44. During the warm startup of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 119 lbs of NO_x or 1021 lbs of CO in any one hour. Warm startup means a startup that is not a hot or cold startup and duration of warm startups shall not exceed 2.5 hours. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
45. During the Shutdown of any CTG, the combined emissions from any one CTG and HRSG exhausts must not exceed 58.5 lbs of NO_x or 222.5 lbs of CO in any one hour. Shutdown shall be defined as the period beginning with the lowering of equipment from base load and lasting until fuel flow is completely off and combustion has ceased and duration of shutdowns shall not exceed one half hour. [PSD Permit (SJ 99-03) X.G.1] Federally Enforceable Through Title V Permit
46. Total number of start-ups and shut-downs for the facility shall not exceed 674 events per year. [PSD Permit (SJ 99-03) X.G.6] Federally Enforceable Through Title V Permit
47. Any excess emission indicated by the CEM system must be considered a violation of the applicable emission limit in the PSD permit. [PSD Permit (SJ 99-03) X.I.4] Federally Enforceable Through Title V Permit
48. The quality assurance project plan used by the Permittee for the certification and operation of the continuous emissions monitors, which meets the requirements of 40 CFR Part 60, Appendix F, must be available upon request to EPA. [PSD Permit (SJ 99-03) X.I.5] Federally Enforceable Through Title V Permit

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